

Remarks

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and following remarks. Claims 1-39 remain pending in the present application. No claims have been allowed. Claims 1 and 39 are independent. Claims 19, 32, 33, and 39 have been amended.

Objection to Claim 39

Claim 39 has been objected to because it was previously and erroneously numbered claim 37 (in addition to the properly numbered claim 37). With entry of this Amendment the claim has been properly renumbered as claim 39. Therefore, Applicants respectfully request that the claim objection be removed.

Patentability of Claims 1-38 under 35 U.S.C. § 112

Claims 1-38 have been rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. These rejections are respectfully traversed. The application, at page 11, lines 17-20, states “The way in which a transaction level model transfers data in a simulation environment without simulating bus operations or pin operations is discussed below with respect to coherent state.” Applicants respectfully submit that there are, for example, two corresponding sections below that include the headings “Coherent State among Simulation Models” (page 16, line 10) and “Synchronization and Coherent State” (page 20, line 20). Therefore, Applicants respectfully request that the 35 U.S.C. § 112 rejections of claims 1-38 be withdrawn.

Claim 3

Dependent claim 3 has been rejected under 35 U.S.C. § 112, first paragraph. This rejection is respectfully traversed. Dependent claim 3 recites in part: “wherein the software execution domain comprises at least one of a **native processor package**, an **instruction set simulator** (ISS), and a **programming language simulator** to **model software execution** in one or more processors” (emphasis added). The application, at page 6, lines 9-10, states that “software simulator 110 may include one or more **instruction set simulators** (ISS), **native processor packages**, etc., to **model execution** of software” (emphasis added). Accordingly, the 35 U.S.C. § 112 rejection of dependent claim 3 should be withdrawn.

Claim 5

Dependent claim 5 has been rejected under 35 U.S.C. § 112, first paragraph. This rejection is respectfully traversed. Dependent claim 5 recites in part: “wherein the logic simulator comprises one of a **hardware description language (HDL) based simulator**, a **gate-level simulator**, a simulation accelerator, a system simulator, a cycle simulator, and a **programmable hardware emulator**” (emphasis added). The application, at page 6, lines 10-13, states: “Logic simulator 130 may include one or more **simulators based on hardware description languages (HDL)**, **gate-level simulators**, **programmable hardware emulators**, etc., to model hardware components” (emphasis added). Accordingly, the 35 U.S.C. § 112 rejection of dependent claim 5 should be withdrawn.

Claim 19

Dependent claim 19 has been rejected under 35 U.S.C. § 112, second paragraph.

Dependent claim 19 has been amended to remove the term “accordingly.” Applicants submit that this amendment does not narrow the scope of the claim prior to entry of the amendment.

Further, Applicants respectfully submit that the 35 U.S.C. § 112 rejection of dependent claim 19 be withdrawn in light of the clarifying amendment.

Claim 32

Dependent claim 32 has been rejected under 35 U.S.C. § 112, second paragraph.

Dependent claim 32 has been amended to remove the term “desired.” Applicants submit that this amendment does not narrow the scope of the claim prior to entry of the amendment. Further,

Applicants respectfully submit that the 35 U.S.C. § 112 rejection of dependent claim 32 be withdrawn in light of the clarifying amendment.

Claim 33

Dependent claim 33 has been rejected under 35 U.S.C. § 112, second paragraph.

Dependent claim 33 has been amended to remove the term “appropriate.” Applicants submit that this amendment does not narrow the scope of the claim prior to entry of the amendment.

Further, Applicants respectfully submit that the 35 U.S.C. § 112 rejection of dependent claim 33 be withdrawn in light of the clarifying amendment.

***Patentability of Claims 1-5, 7-20, 22-29, 32, 34, 35, and 37-39 over Klein in view of Rajsuman
under 35 U.S.C. § 103(a)***

Claims 1-5, 7-20, 22-29, 32, 34, 35, and 37-39 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,768,567 to Klein et al. ("Klein") in view of U.S. Patent No. 6,678,645 to Rajsuman et al. ("Rajsuman"). These rejections are respectfully traversed.

Claims 1-5, 7-20, 22-29, 32, 34, 35, 37, and 38

Independent claim 1 is directed to a method, and requires: "selectively activating and deactivating particular **simulation domains** in a simulation environment such that a resolution and a performance for a circuit design being simulated is dynamically modified; and said simulation environment comprising a plurality of **simulation domains**" (emphasis added).

As noted in the Office Action, Klein states:

periodically suspending said simulation of software execution, switching from said simulation of software execution to said simulation of hardware operations, and subsequently returning to said simulation of software execution during said one or more co-simulation runs (col. 17, lines 1-6)

and also:

In an optimizing hardware-software co-simulator, a method for co-simulating a hardware-software system having memory, the method comprising the steps of: simulating hardware operations for one or more co-simulation runs with one or more bus interface model instances modeling one or more processors, one or more memory model instances modeling one or more memory types, and a logic simulator controlling the bus interface model instances and the memory model instances (col. 14, lines 16-25).

As such, Klein fails to teach or suggest selectively activating and deactivating particular simulation domains in a simulation environment such that a resolution and a performance for a circuit design being simulated is dynamically modified, as recited in independent claim 1. Klein

also fails to teach or suggest said simulation environment comprising a plurality of simulation domains, as recited in independent claim 1. Furthermore, Rajsuman fails to cure the deficiencies of Klein. Therefore, neither Klein nor Rajsuman, alone or in combination, teach or suggest the limitations of independent claim 1. Accordingly, the 35 U.S.C. § 103(a) rejection of independent claim 1 should be withdrawn.

Dependent claims 2-5, 7-20, 22-29, 32, 34, 35, 37, and 38 depend directly or indirectly from independent claim 1 and are allowable for at least the reasons recited above with respect to their parent claim 1. Moreover, claims 2-5, 7-20, 22-29, 32, 34, 35, 37, and 38 recite combinations of features that are independently patentable. Accordingly, the 35 U.S.C. § 103(a) rejections of dependent claims 2-5, 7-20, 22-29, 32, 34, 35, 37, and 38 should be withdrawn.

Claim 39

Independent claim 39 is directed to a machine readable storage medium having stored thereon machine readable instructions that when executed implement a method that requires: "selectively activating and deactivating particular **simulation domains** in a simulation environment such that a resolution and a performance for a circuit design being simulated is dynamically modified; and said simulation environment comprising a plurality of **simulation domains**" (emphasis added).

As noted in the Office Action, Klein states:

periodically suspending said simulation of software execution, switching from said simulation of software execution to said simulation of hardware operations, and subsequently returning to said simulation of software execution during said one or more co-simulation runs (col. 17, lines 1-6)

and also:

In an optimizing hardware-software co-simulator, a method for co-simulating a hardware-software system having memory, the method comprising the steps of: simulating hardware operations for one or more co-simulation runs with one or more bus interface model instances modeling one or more processors, one or more memory model instances modeling one or more memory types, and a logic simulator controlling the bus interface model instances and the memory model instances (col. 14, lines 16-25).

As such, Klein fails to teach or suggest selectively activating and deactivating particular simulation domains in a simulation environment such that a resolution and a performance for a circuit design being simulated is dynamically modified, as recited in independent claim 39.

Klein also fails to teach or suggest said simulation environment comprising a plurality of simulation domains, as recited in independent claim 39. Furthermore, Rajsuman fails to cure the deficiencies of Klein. Therefore, neither Klein nor Rajsuman, alone or in combination, teach or suggest the limitations of independent claim 39. Accordingly, the 35 U.S.C. § 103(a) rejection of independent claim 39 should be withdrawn.

***Patentability of Claims 6 and 36 over Klein in view of Rajsuman in further view of Barnett
under 35 U.S.C. § 103(a)***

Dependent claims 6 and 36 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,768,567 to Klein et al. ("Klein") in view of U.S. Patent No. 6,678,645 to Rajsuman et al. ("Rajsuman") in further view of U.S. Patent No. 6,223,144 to Barnett et al. ("Barnett"). These rejections are respectfully traversed.

Dependent claims 6 and 36 depend directly or indirectly from independent claim 1 and are allowable for at least the reasons recited above with respect to their parent claim 1. Furthermore, Barnett fails to cure the deficiencies of Klein and Rajsuman. Moreover, claims 6 and 36 recite combinations of features that are independently patentable. Accordingly, the 35 U.S.C. § 103(a) rejections of dependent claims 6 and 36 should be withdrawn.

Patentability of Claim 21 over Klein in view of Rajsuman in further view of Rush under 35

U.S.C. § 103(a)

Dependent claim 21 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,768,567 to Klein et al. ("Klein") in view of U.S. Patent No. 6,678,645 to Rajsuman et al. ("Rajsuman") in further view of U.S. Patent No. 5,742,181 to Rush ("Rush"). This rejection is respectfully traversed.

Dependent claim 21 depends indirectly from independent claim 1 and is allowable for at least the reasons recited above with respect to its parent claim 1. Furthermore, Rush fails to cure the deficiencies of Klein and Rajsuman. Moreover, claim 21 recites a combination of features that is independently patentable. Accordingly, the 35 U.S.C. § 103(a) rejection of dependent claim 21 should be withdrawn.

Patentability of Claims 30, 31, and 33 over Klein in view of Rajsuman in further view of Patel

under 35 U.S.C. § 103(a)

Dependent claims 30, 31, and 33 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,768,567 to Klein et al. ("Klein") in view of U.S. Patent No. 6,678,645 to Rajsuman et al. ("Rajsuman") in further view of U.S. Patent No. 5,546,562 to Patel ("Patel"). These rejections are respectfully traversed.

Dependent claims 30, 31, and 33 depend directly or indirectly from independent claim 1 and are allowable for at least the reasons recited above with respect to their parent claim 1. Furthermore, Patel fails to cure the deficiencies of Klein and Rajsuman. Moreover, claims 30,

31, and 33 recite combinations of features that are independently patentable. Accordingly, the 35 U.S.C. § 103(a) rejections of dependent claims 30, 31, and 33 should be withdrawn.

Request for Interview

If any issues remain, the Examiner is formally requested to contact the undersigned attorney prior to issuance of the next Office Action in order to arrange a telephonic interview. It is believed that a brief discussion of the merits of the present application may expedite prosecution. Applicants submit the foregoing Response so that the Examiner may fully evaluate Applicants' position, thereby enabling the interview to be more focused.

This request is being made under MPEP § 713.01, which indicates that an interview may be arranged in advance by a written request.

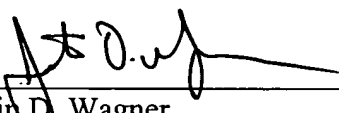
Conclusion

The claims in their present form should be allowed. Such action is respectfully requested.

Respectfully submitted,

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